

What is claimed is

1. A walking brace for the lower leg of a patient, said walking brace comprising:
  - a leg portion adapted to fit substantially around the lower leg of a patient,
  - a rigid sole portion adapted to fit beneath the foot of a patient, said rigid sole portion having an opening therethrough in the area of the patient's heel, said opening extending through said upper surface and said lower surface of said rigid sole portion, such that no portion of said rigid sole portion is disposed below the patient's heel; and
    - a dual layer of resilient shock-absorbing material disposed along said bottom surface of said rigid sole portion, said dual layer of resilient shock-absorbing material having a heel portion extending upwardly through said opening in said sole portion to a height no greater than slightly above said upper surface of said rigid sole portion, said dual layer comprising an upper layer of a relatively softer material and a lower layer of a relatively more durable material, said upper layer being in contact with the patient's heel, said lower layer being in contact with the ground when the patient walks.
2. The walking brace of claim 1 wherein said heel portion is integrally formed with said upper layer of said dual layer of shock absorbing material.
3. The walking brace of claim 1 wherein said heel portion has an upper surface substantially coplanar with said upper surface of said sole portion.
4. The walking brace of claim 1 wherein the material of the lower layer of said dual layer has a greater density than the material of said upper layer of said dual layer.

5. The walking brace of claim 4 wherein said lower layer of said dual layer is made of a material selected from the group consisting of thermoplastic rubber, polyvinyl chloride, and styrene-butadiene rubber.

6. The walking brace of claim 5 wherein said upper layer is made of an ethylene vinyl acetate polymer.

7. The walking brace of claim 1 wherein the thickness of said dual layer from the top surface of the heel portion to the bottom surface of the bottom layer is no greater than about 1 inch.

8. The walking brace of claim 1 further comprising a foam layer disposed over the upper surface of said sole portion.

9. The walking brace of claim 1 wherein said leg portion comprises a rigid shell integral with said sole portion.

10. The walking brace of claim 9 further comprising at least one inflatable air cell for providing therapeutic pressure to said leg.

11. The walking brace of claim 10 wherein said at least one inflatable air cell comprises a communication means by which the interior of said air cell can be in fluid communication with the atmosphere.

12. The walking brace of claim 11 wherein said rigid shell comprises at least one protruding region for receiving said communication means, such that said communication means is directed toward the front side of said walking brace.

13. The walking brace of claim 9 wherein said rigid shell comprises a rear shell member and a front shell member, said rear shell member comprising means for expanding the width thereof.

14. The walking brace of claim 13 wherein said expansion means comprises at least one longitudinal slit, such that the portions of said rear shell member on either side of said longitudinal slit can be pulled apart, such that said rear shell member can expand laterally.

15. The walking brace of claim 13 wherein the upper end of said longitudinal slit terminates at the upper edge of said rear shell member.

16. The walking brace of claim 13 wherein the upper end of said longitudinal slit terminates below the upper edge of said rear shell member, and the portion of the shell member between the upper edge of the shell member and the upper end of the longitudinal slit is cut to allow the portions of the shell portion on either side of the slit can be pulled apart to allow the width of the rear shell member to expand..

17. The walking brace of claim 14 wherein said expansion means comprises a plurality of longitudinally aligned slits, said longitudinally aligned slits being separated one from the other by one or more frangible septa.

18. The walking brace of claim 14 wherein said expansion means comprises a plurality of longitudinal slits spaced laterally from one another.

19. A walking brace for the lower leg of a patient, said walking brace comprising:  
a leg portion adapted to fit substantially around the lower leg of a patient, and  
a rigid sole portion adapted to fit beneath the foot of a patient,

said leg portion comprising a rigid shell integral with said sole portion, said rigid shell comprising a rear shell member and a front shell member, said rear shell member comprising means for expanding the width thereof.

20.    The walking brace of claim 19 wherein said expansion means comprises at least one longitudinal slit, such that the portions of said rear shell member on either side of said longitudinal slit can be pulled apart to expand said rear shell member laterally.

21.    The walking brace of claim 20 wherein the upper end of said longitudinal slit terminates at the upper edge of said rear shell member.

22.    The walking brace of claim 20 wherein the upper end of said longitudinal slit terminates below the upper edge of said rear shell member, and the portion of the shell member between the upper edge of the shell member and the upper end of the longitudinal slit is cut to allow the portions of the shell portion on either side of the slit to be pulled apart to expand the width of the rear shell member.

23.    The walking brace of claim 19 wherein said expansion means comprises a plurality of longitudinally aligned slits, said longitudinally aligned slits being separated one from the other by one or more frangible septa.

24.    The walking brace of claim 19 wherein said expansion means comprises a plurality of longitudinal slits spaced laterally from one another.

25.    The walking brace of claim 19 wherein said expansion means comprises at least one longitudinal slit having two ends, a least one of said ends terminating at a frangible septum, such that when said septum is broken said rear shell member can expand laterally.

26. The walking brace of claim 19 further comprising at least one adjustable air cell having a means for communication between the interior of said air cell and the atmosphere, wherein said rigid shell comprises at least one protruding region for receiving said air cell communication means, said region constructed such that said communication means is directed toward the front side of said walking brace.

27. The walking brace of claim 19 wherein said rigid sole portion has an opening therethrough in the area of the patient's heel, said opening extending through said upper surface and said lower surface of said rigid sole portion, such that no portion of said rigid sole portion is disposed below the patient's heel.

28. The walking brace of claim 27 further comprising a dual layer of resilient shock-absorbing material disposed along said bottom surface of said rigid sole portion, said layer of resilient shock-absorbing material having a heel portion extending upwardly through said opening in said sole portion to a height no greater than slightly above said upper surface of said rigid sole portion, said dual layer comprising an upper layer of a relatively softer material and a lower layer of a relatively more durable material, said upper layer being in contact with the patient's heel, said lower layer being in contact with the ground when the patient walks.

29. A walking brace for the lower leg of a patient, said walking brace comprising:  
a leg portion adapted to fit substantially around the lower leg of a patient, and  
a rigid sole portion adapted to fit beneath the foot of a patient,  
said leg portion comprising a rigid shell integral with said sole portion, and  
at least one adjustable air cell having a means for communication between the interior of said air cell and the atmosphere, wherein said rigid shell comprises at least one protruding

region for receiving said air cell communication means, said region constructed such that said communication means is directed toward the front side of said walking brace.

30. A walking brace for the lower leg of a patient, said walking brace comprising:

- a leg portion adapted to fit substantially around the lower leg of a patient,
- a rigid sole portion adapted to fit beneath the foot of a patient, and

a strap for securing the leg portion about the lower leg of the patient, said strap being removably secured to said leg portion.

31. The walking brace of claim 30 wherein said leg portion comprises a pin member protruding from an outer surface thereof and retaining means for slidably receiving said strap, and said strap comprises a means releasably engageable with said pin member, such that strap member can be released from said pin member and slidably removed from said retaining means.